U.S. Rep. John Sweeney Visits BNL and NSLS

February 24, 2003

U.S. Representative John Sweeney (R-20th District), visited BNL on February 24 with his aide Gaia Mishanta Ford. Sweeney serves on the House Appropriations Committee and on February 12 was named to the Select Committee on Homeland Security, which helps develop policy for the larger Homeland Security Committee.

Welcomed by BNL Interim Director Peter Paul, Sweeney met with Michael Holland, Manager of DOE's Brookhaven Area Office, and Marge Lynch, Assistant Laboratory Director for Community, Education, Government & Public Affairs. The Congressman then visited the NSLS, one of the world's most widely used scientific facilities. Researchers at the NSLS use sophisticated techniques to study the electronic and structural properties of materials and surfaces at the atomic level.

At the NSLS, Doon Gibbs, Interim Associate Laboratory Director for Basic Energy Sciences, and NSLS Chair Steven Dierker explained a proposed NSLS upgrade that will dramatically improve the capabilities available to the approximately 2,500 researchers from scientific institutions and industry who use the NSLS for their research each year. They also discussed plans for the new BNL Center for Functional Nanomaterials.

Later, on the NSLS experimental floor, Sweeney visited beamline U10B, where researchers use infrared light to study such diseases as Alzheimer's, osteoarthritis, and osteoporosis.

He next stopped at Berkner Hall, where Ralph James, Associate Laboratory Director for Energy, Environment & National Security, explained some of the Lab's work in the field of homeland security.

James focused on BNL capabilities in the areas of advanced sensor technology, particularly the Lab's research and development on nuclear, chemical, biological, and explosive detectors. Sweeney was also interested in seeing actual prototypes of BNL hardware that could detect more minute quantities of nuclear radiation from greater distances and without the false alarms attributed to many current approaches.

James described some of BNL's research suited to reducing the vulnerabilities of New York State, including better control of radioactive materials, advanced technologies to monitor cargo containers at national seaports, and sensor networks to help protect New York and its mass transportation systems.

BNL scientists' work to identify and prioritize risks, such as those connected with U.S. public water, bridges, banking and finance, electric power, gas, and oil and telecommunications infrastructures, was also presented.

On the experimental floor of the NSLS, U.S. Representative John Sweeney (center) and BNL Interim Director Peter Paul talk with NSLS scientist Lisa Miller about research on Alzheimer's disease being done at beamline U10B.

The Congressman conversed with Associate Director for Life Sciences Nora Volkow before concluding his visit. "The enthusiastic interest shown by Congressman Sweeney in the broad science of BNL, as well as his immediate understanding of the Lab's crucial role in the safety and securitiy of New York City, was impressive and refreshing," said BNL Interim Director Peter Paul.

— Liz Seubert

DOE Nanoscience Workshop Draws Crowd

February 27-28, 2003

More than 400 attendees of the first DOE Nanoscale Science Research Centers workshop, which was held February 27-28 in Washington D.C., were treated to a blue-ribbon lineup of political and scientific speakers. The message the participants heard was loud and clear: Nanotechnology research may involve the study of very small things, but it represents potentially very big things in terms of federal funding for the physical sciences.

"It's as if we all have the same speechwriter," observed former BNL Director John Marburger, who is now Director of the Office of Science & Technology Policy and President George W. Bush's science advisor, who delivered an address entitled "Nanoscience and the National Science Agenda."

In his speech, Marburger said that the governments of every major developed nation are now seeking to gain a competitive advantage by investing in nanotechnology research. "What gives our nation the edge are the five DOE nanoscale science research centers," he said.

Under the National Nanoscience Initiative which was launched in fiscal year 2001, DOE's Office of Science announced it would establish the five new centers to "support the synthesis, processing, fabrication, and analysis" of materials at the nanoscale. These centers are: Lawrence Berkeley National Laboratory's Molecular Foundry; the Center for Functional Nanomaterials at BNL; the Center for Integrated Nanotechnologies at Sandia National Laboratories and Los Alamos National Laboratory; the Center for Nanophase Materials Materials Sciences at Oak Ridge National Laboratory; and the Center for Nanoscale Materials at Argonne National Laboratory.

Marburger was introduced by Office of Science Director Raymond Orbach who, in his opening remarks, proclaimed that the five DOE nanoscience centers will be at the hub of national laboratory research efforts in nanorelated fields.

"All five centers are in the President's proposed FY2004 budget and all are well on their way to becoming a reality," Orbach said.

Before hearing from Orbach and Marburger, workshop attendees first heard from U.S. Representative Judy Biggert, a Republican who represents the 13th District of Illinois and who chairs the Energy Subcommittee of the House Science Committee.

Biggert recently introduced H.R. 34, the "Energy Science and Investment Act of 2003," which calls for the Office of Science to receive an overall increase in funding of nearly 62 percent by FY2007. This would mean a FY2007 authorization level of $5.31 billion, compared to the $3.3 billion funding for FY2003. According to the American Institute of Physics, her bill is one of the most important physics-related research bills that the new Congress will consider this year.

"Nanotechnology research is very important to our nation's future economic competitiveness," Biggert told workshop attendees. "The Office of Science is uniquely positioned to do nanotechnology research and I am convinced its nanoscience centers can only enhance our economic competitiveness."

The Congresswoman urged attendees to contact their Congressional representatives and get them to support H.R. 34, which now has 74 cosponsors. In addition to a substantial increase in funding for the Office of Science, her bill would also make some significant administrative changes in DOE. An Under Secretary of Energy & Research position would be created, with authority over all DOE funded civilian science at the non-weapons national laboratories and research universities. A new Assistant Secretary of Science would replace the current director position, and a Science Advisory Board would be established that would consist of the chairs of DOE's advisory panels.

Attendees at the DOE Nanoscale Science Research Centers workshop.

"I am a scientist wannabe who has always thought that scientists were very cool," Biggert said to enthusiastic applause.

The applause was also enthusiastic and vigorous for U.S. Representative Zach Wamp, a Republican who represents the 3rd District of Tennessee and serves on House Appropriations Committee

and the Energy and Water Subcommittees.

Speaking at a Thursday luncheon, Wamp told attendees, "If we want a balanced federal budget, we have to invest in technology. Investing in the physical sciences can give us another boom economy."

Wamp has won a "Champions of Science" award bestowed by the Science Coalition, an alliance of more than 400 organizations dedicated to sustaining the federal government's commitment to U.S. leadership in basic science. As a rousing speaker, Wamp energized the nanoscience audience.

Arguing that the national economic slump is a reason for more investment in the physical sciences rather than less, he cited the example of the Japanese government.

"The economy in Japan is bad, but that did not stop their government from investing in super-computing and taking the lead in that technology," he said. "New technologies are needed to solve problems not just today but for the long-term too. This takes leadership [in the physical sciences] and we're just not there now."

To get the resources needed to advance the development of nano and other technologies that can help solve persistent global problems, such as energy, Wamp said, "We need to do a much better job of marketing the physical sciences. We've got to brand the physical sciences in a different way. It is crucially important to the vitality of your science and this country's economy that we get people excited about and supportive of the physical sciences."

Attendees also heard from Senator Pete Domenici (R-New Mexico), another winner of the Champions of Science award. As chairman of the Senate Energy and Water Development Appropriations Subcommittee, Domenici has been a strong supporter of the physical sciences. He is especially keen on the promise of nanotechnology.

"Nanotechnology represents a new frontier, and it's harder to guess exactly where these new ultra-miniaturized technologies will make the greatest contribution," the Senator said. "Suggestions range from new generations of ultra-tough or ultra-light materials to new approaches to hydrogen storage for a future generation of hydrogen fueled vehicles. This is a truly exciting and revolutionary field."

Domenici also expressed confidence in DOE's ability to lead the development of nanotechnology. "The Department has led the nation in other major scientific initiatives in the past, from high performance computing to the human genome project," he said. "Nanoscience provides another golden opportunity for the Department to again lead the way into an important new area."

Scientific presentations were given by a number of the major names in nanotechnology research, and the directors of the five nanoscale science research centers each gave an overview of their centers, including BNL's Bob Hwang, who spoke about the Lab's Center for Functional Nanomaterials.

It was Patricia Dehmer, Director of DOE's Office of Basic Energy Sciences, who perhaps best summarized the anticipated role of the five new nanoscience centers with respect to the National Nanotechnology Initiative and the country's need to maintain economic competitiveness.

"The DOE centers are different from centers funded by the National Science Foundation and others, in that they are patterned after the same philosophy that guides our national user facilities: They are there to be used by everyone, including researchers from universities and private industry, as well as national laboratories," Dehmer said. "We will partner aggressively with NSF and others to get the job done. The importance of nanotechnology research and development cannot be overstated."

— Lynn Yarris, Lawrence Berkeley National Laboratory

John Marburger, Director of the Office of Science & Technology Policy, and Patricia Dehmer, Director of DOE's Office of Basic Energy Sciences.